

**PRAKTIJKONDERZOEK
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Good Agricultural Practice (GAP) of glasshouse lettuce and spinach

Registration during 2005-2006

C. de Kreijl



Productschap  Tuinbouw

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Applied Plant Research
Research Unit Glass
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Glass

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1 Introduction

This report deals with registration of Good Agricultural Practice for glasshouse lettuce and spinach. It covers the period November 2005 – August 2006 for spinach (both under glass and outdoor production) and October 2005 – August 2006 for glasshouse lettuce.

It has been calculated from earlier registrations that it was possible to get a reliable result with a selective sampling. The auctions *the Greenery* and *ZON* selected growers based on earlier experience that these growers supplied regularly lettuce or spinach to the auction and these growers were willing to register accurately. These growers had to report a planned harvest about 10 days before harvest date. Samples were analysed at the laboratory Zeeuws-Vlaanderen. Nitrate contents were reported to the auctions. These data together with the registration of Good Agricultural Practice by the spinach growers were processed by the Applied Plant Research – Division Glasshouse Horticulture on request of the Productboard of Horticulture (Productschap Tuinbouw).

Earlier registrations have been published e.g. De Kreij and Van der Maarl (2005).

2 Spread of the registration

Total number of registration for lettuce was 72 from 25 growers. This was all under glass.

The number of registration for spinach was 23 from 6 growers. This was all under glass. The spinach registration covered 17.5 ha.

3 N fertilisation in spinach

In Figure 1 the N fertilization for spinach is shown. Nitrogen fertilization varied according to the need of the particular soil.

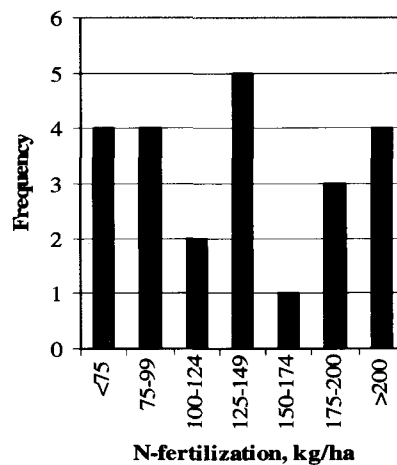


Figure 1. Nitrogen fertilization of spinach.

4 Nitrate contents in lettuce

Nitrate contents in lettuce are shown in Figure 2. In October 2005 – March 2006 (winter period) the nitrate contents never exceeded the EU limit (4500 mg per kg fresh weight; from EC Directive 1822/2005). In the period April - September 2006 the summer limit of 3500 mg per kg fresh weight has not been exceeded in the 20 samples.

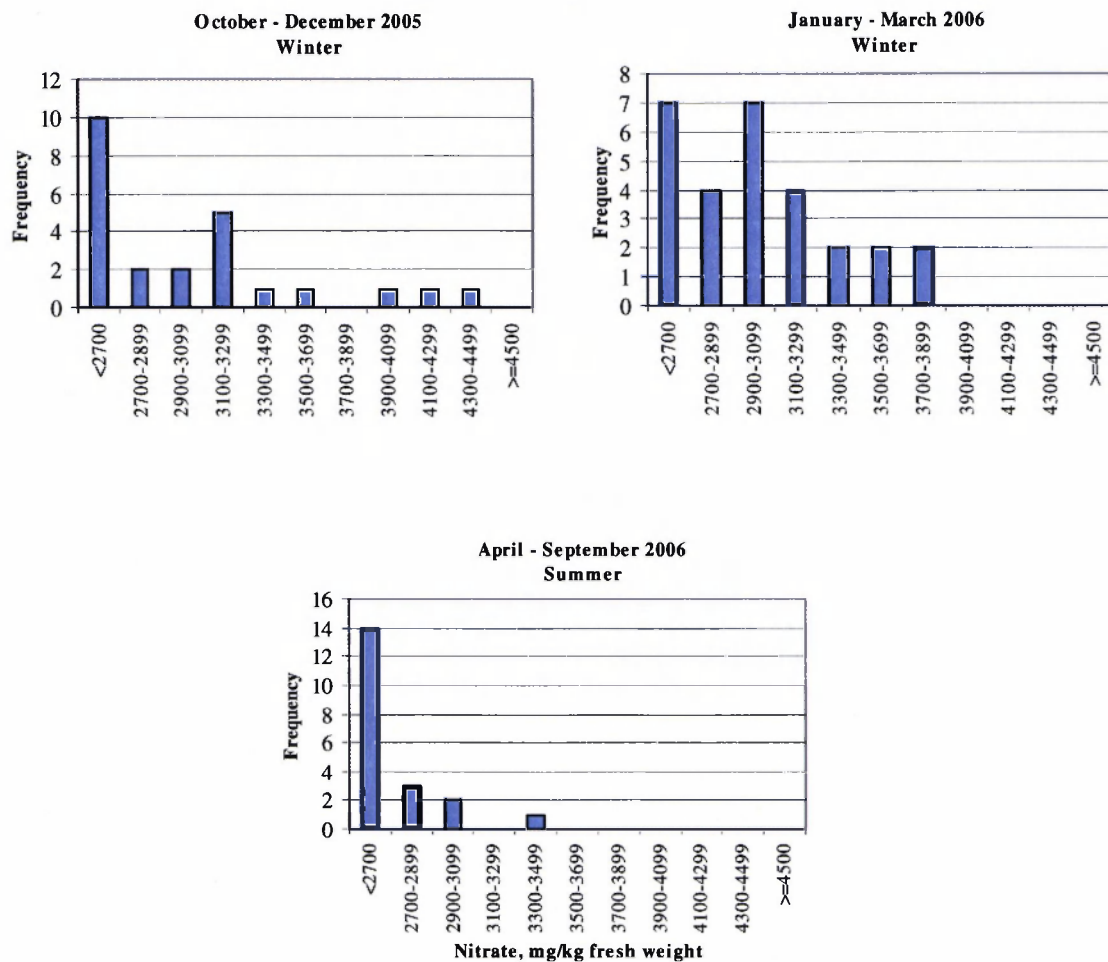


Figure 2. Nitrate content in lettuce.

5 Nitrate contents in spinach

Nitrate contents in spinach are shown in Figure 3.

In the winter period (October 2005 – March 2006) 6 samples have been analyzed. The EU limit in the winter period was 3000 mg nitrate per kg fresh weight. The EU limit has been exceeded in 2 samples, which were 33 %. According to Anonymous (2005) the Dutch derogation has a nitrate limit of 4500 mg per kg fresh weight. This limit was never exceeded. Note that the winter period in the Dutch derogation is from **1 November** until 31 March and this differs from the EU winter period, in which the winter period started earlier, i.e. 1 October. In short, that meant that in EU regulation October belonged to the winter period and in Dutch regulation October belonged to the summer period. In this investigation there were no data from October. So, there was no influence of the difference in the winter period between EU and Dutch regulation.

In the summer period (April 2006 –September 2006) in total 17 samples have been analyzed. In this period the EU-limit was 2500 mg per kg fresh weight. This limit has been exceeded by 1 sample, being 6 % of the samples. The NL- limit in the summer was 3500 mg per kg fresh weight. This limit has not been exceeded by any sample.

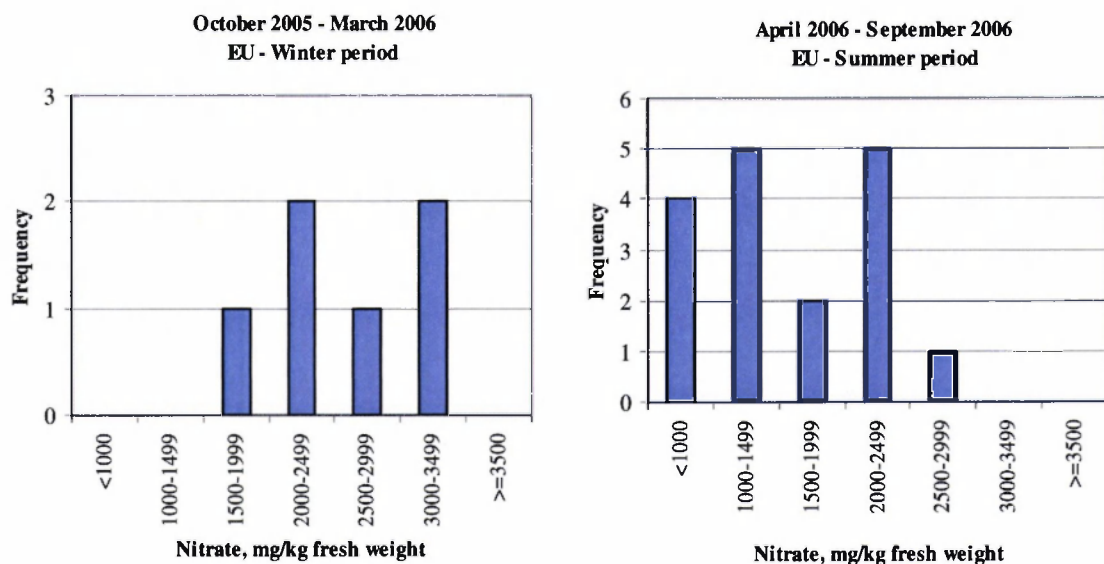


Figure 3. Nitrate content in spinach.

6 Conclusion and summary

Lettuce

During October 2005 until August 2006 a sample survey has been executed for Good Agricultural Practice of lettuce grown under glass. In total 72 registrations of 25 lettuce growers were examined. Of the registrations there were 52 registrations during the winter period (October 2005 – March 2006) and 20 registrations during the summer period (April – August 2006).

The EU-limit for nitrate in lettuce during the winter period of 4500 mg per kg fresh weight has not been exceeded by any sample. All the 20 samples from the summer period had lower nitrate contents than the EU limit of 3500 mg per kg fresh weight.

Spinach

For spinach the same registrations, plus the use of N fertilizer, has been made of in total 23 registrations by 6 spinach growers. This covered an area of 17.5 ha. Registrations were during November 2005 – August 2006, of which 17 registrations in the summer period (April 2006 - August 2006) and 6 registrations in the winter period (November 2005 – March 2006).

During the summer period all 23 samples had a lower nitrate content than the NL limit (3500 mg per kg fresh weight). One of 23 (6 %) exceeded the EU summer limit (2500 mg per kg fresh weight).

The NL nitrate limit during the winter period of 4500 mg per kg fresh weight has not been exceeded. In the winter period the EU-limit for nitrate in spinach of 3000 mg per kg fresh weight has been exceeded by 2 out of 6 samples, being 33 % of the samples.

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